

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

PARKERVISION, INC.,
Plaintiff

-v-

INTEL CORPORATION,
Defendant

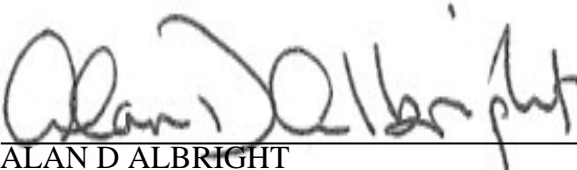
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W-20-CV-00108-ADA

CLAIM CONSTRUCTION ORDER

The Court held a *Markman* hearing on January 26, 2021. During that hearing, the Court provided its final constructions. The Court now enters those claim constructions.

SIGNED this 26th day of January, 2021.



ALAN D ALBRIGHT
UNITED STATES DISTRICT JUDGE

| Term | Plaintiff's Proposed Construction | Defendants' Proposed Construction | Court's Final Construction |
|---|--|---|---|
| "universal frequency down-converter (UFD)" ('518 patent, claim 50) | "circuitry that generates a down converted output signal from an input signal" | "A down-converter that down-converts a carrier signal at an aliasing rate (i.e., by sampling at less than or equal to twice the frequency of the carrier signal)" | "circuitry that generates a down converted output signal from an input signal from a wide range of electromagnetic frequencies" |
| "energy transfer module" ('902 patent, claim 1) | Plain and ordinary meaning | "A module that down-converts an electromagnetic signal by transferring energy at an aliasing rate (i.e., by sampling at less than or equal to twice the frequency of the electromagnetic signal)" | Plain-and-ordinary meaning |
| "frequency down-conversion module" ('444 patent, claims 2, 3; '474 patent, claim 1) | Plain and ordinary meaning | "A module that down-converts an input signal at an aliasing rate (i.e., by sampling at less than or equal to twice the frequency of the input signal)" | Plain-and-ordinary meaning |
| "aliasing module" ('725 patent, claim 1) | Plain and ordinary meaning | "A module that down-converts an RF information signal at an aliasing rate (i.e., by sampling at less than or equal to twice the frequency of the RF information signal)" | Plain-and-ordinary meaning |

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| <p>“system for frequency down-converting” ('513 patent, claim 19; '528 patent, claim 1; '736 patent, claim 1)</p> | <p>Plain and ordinary meaning</p> | <p>“A system that down-converts a modulated carrier signal at an aliasing rate (i.e., by sampling at less than or equal to twice the frequency of the modulated carrier signal)”</p> | <p>Preamble is limiting. Plain-and-ordinary meaning.</p> |
| <p>“frequency down-conversion module” ('673 patent, claim 1)</p> | <p>Plain and ordinary meaning</p> | <p>“A module that down-converts an input modulated carrier signal at an aliasing rate (i.e., by sampling at less than or equal to twice the frequency of the input modulated carrier signal)”</p> | <p>Plain-and-ordinary meaning</p> |
| <p>“apparatus for down-converting” ('673 patent, claim 13)</p> | <p>Plain and ordinary meaning</p> | <p>“An apparatus that down-converts a modulated carrier signal at an aliasing rate (i.e., by sampling at less than or equal to twice the frequency of the modulated carrier signal)”</p> | <p>Preamble is limiting. Plain-and-ordinary meaning.</p> |
| <p>“under-samples” ('444 patent, claim 2; '474 patent, claim 6)</p> | <p>“sampling at an aliasing rate” or “sampling at less than or equal to twice the frequency of the input signal”</p> | <p>“samples at less than or equal to twice the frequency of the input signal using negligible apertures (i.e., pulse widths) that tend towards zero time in duration”</p> | <p>“sampling at less than or equal to twice the frequency of the input signal”</p> |

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| <p>“the [] switch is coupled to the [] storage element at a [] node and coupled to a [] reference potential” (’474 patent, claim 1)</p> | <p>Plain and ordinary meaning</p> | <p>“the switch receives current from a storage element via a node, and shunts (i.e., diverts) current to a point held at a constant reference voltage”</p> | <p>Plain-and-ordinary meaning wherein “coupled” is directly connected or connected through a conductor (or a closed switch).</p> |
| <p>[wherein said storage elements comprises] “a capacitor that reduces a DC offset voltage in said first-down converted signal and said second down-converted signal” (’444 patent, claim 4)</p> | <p>Plain and ordinary meaning</p> | <p>[wherein said storage elements comprises] “a capacitor that reduces a DC offset voltage in both said first down-converted signal and said second down-converted signal”</p> | <p>Plain-and-ordinary meaning wherein the “a capacitor” in each of the storage elements reduces a DC offset voltage in the corresponding down-converted signal</p> |
| <p>“DC offset voltage” (’444 patent, claim 4)</p> | <p>“a deviation of DC voltage from a reference voltage”</p> | <p>“a DC voltage level that is added to a signal of interest by related circuitry”</p> | <p>Plain-and-ordinary meaning wherein the plain-and-ordinary meaning is “the difference between the DC voltage of a signal and a reference voltage, <i>e.g.</i>, ground”</p> |
| <p>“energy storage element” (’513 patent, claim 19; ’528 patent, claim 1; ’736 patent, claims 1, 11, 21)</p> | <p>“an element of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal for driving a low impedance load”</p> | <p>“an element that stores non-negligible amounts of energy from an input electromagnetic (EM) signal”</p> | <p>“an element of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal”</p> |

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| "energy storage device" ('673 patent, claim 13) | "a device of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal for driving a low impedance load" | "a device that stores a non-negligible amount of energy from an input electromagnetic (EM) signal" | "a device of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal" |
| "energy storage module" ('902 patent, claim 1) | "a module of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal for driving a low impedance load" | "a module that stores a non-negligible amount of energy from an input electromagnetic (EM) signal" | "a module of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal" |
| "storage element" ('444 patent, claim 3; '474 patent, claim 1) | "an element of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal for driving a low impedance load" | "an element that stores a nonnegligible amount of energy from an input electromagnetic (EM) signal" | "an element of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal" |
| "storage module" ('725 patent, claim 1) | "a module of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal for driving a low impedance load" | "a module that stores a non-negligible amount of energy from an input electromagnetic (EM) signal" | "a module of an energy transfer system that stores non-negligible amounts of energy from an input electromagnetic signal" |

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| "modulated carrier signal" ('513 patent, claim 19; '528 patent, claim 1; '736 patent, claim 1; '673 patent, claims 1, 13) | "electromagnetic signal at transmission frequency having at least one characteristic that has been modulated by a baseband signal" | "a carrier signal that is modulated by a baseband signal" | "an electromagnetic signal at a transmission frequency having at least one characteristic that has been modulated by a baseband signal" |
| "sampling aperture" ('513 patent, claim 19; '528 patent, claim 1; '736 patent, claims 1, 11; '673 patent, claim 13) | "a period of time during which the switch is in its closed (on) state, thereby reducing a continuous-time signal to a discrete-time signal" | "a period of time during which the switch is in its closed (i.e., on) state as part of the process of reducing a continuous-time signal to a discrete-time signal" | "a period of time during which the switch is in its closed (<i>i.e.</i> , on) state" |
| "switch" / "switching device" / "switching module" ('528 patent, claims 1, 5, 8, 17; '444 patent, claim 3; '474 patent; claim 1; '513 patent, claim 19; '518 patent, claim 50; '736 patent, claims 1, 11; '673 patent, claims 1, 13; '725 patent, claim 1; '902 patent, claim 1) | "an electronic device for opening and closing a circuit as dictated by an independent control input" | "an electronic device for opening and closing a circuit" | Plain-and-ordinary meaning wherein the plain-and-ordinary meaning is "an electronic device for opening and closing a circuit as dictated by an independent control input" |

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| <p>“a down-converted signal being generated from said sampled energy” (’902 patent, claim 1)</p> | <p>“a lower frequency signal formed from sampled energy transferred from the electromagnetic signal when the switch module is closed and from sampled energy discharged from the storage module when the switch module is open”</p> | <p>“a down-converted signal being created from sampled energy stored in the energy storage module”</p> | <p>“a lower frequency signal formed from sampled energy transferred from the electromagnetic signal when the switch module is closed and from sampled energy discharged from the storage module when the switch module is open”</p> |
| <p>“the energy discharged during any given discharge cycle is not completely discharged” (’736 patent, claims 1 and 11; ’528 patent, claim 9)</p> | <p>Plain and ordinary meaning</p> | <p>Indefinite</p> | <p>Not indefinite. Plain-and-ordinary meaning wherein the plain-and-ordinary meaning is “the energy that could potentially be discharged during any given discharge cycle is not completely discharged”</p> |
| <p>“between six and fifty percent of the energy transferred from the RF information signal to the storage module is discharged from the storage module” (’725 patent, claim 17)</p> | <p>Plain and ordinary meaning</p> | <p>Indefinite</p> | <p>Not indefinite. Plain-and-ordinary meaning.</p> |

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|---|-----------------------------------|-----------------------------------|---|
| “between six and twenty-five percent of the energy transferred from the RF information signal to the storage module when is discharged (’725 patent, claim 18) | Plain and ordinary meaning | Indefinite | Not indefinite. Plain-and-ordinary meaning. |
| “between ten and twenty percent of the energy transferred from the RF information signal to the storage module discharged from the storage module” (’725 patent, claim 19) | Plain and ordinary meaning | Indefinite | Not indefinite. Plain-and-ordinary meaning. |
| “separate integration module” (’528 patent, claim 17) | Plain and ordinary meaning | Indefinite | Not indefinite. Plain-and-ordinary meaning. |
| “substantially the same size” (’902 patent, claim 5) | Plain and ordinary meaning | Indefinite | Not indefinite. Plain-and-ordinary meaning. |